

Dialectical Roots for Interest Prohibition Theory

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Abstract

It is argued that arguments for strict prohibition of interests must be based on the use of arguments from authority. This is carried out by first making a survey of so-called dialectical roots for interest prohibition and then demonstrating that for at least one important positive interest bearing financial product, the savings account with interest, its prohibition cannot be inferred from a match with any of these root cases.

1 Introduction

Interest Prohibition Theory (IP Theory) is concerned with the theoretical aspects of interest prohibition. In [8] a brief survey of IP Theory has been presented, together with a meta-framework which specifies its scope and reasoning methods. The meta-framework is characterized as a so-called application specific informal logic (ASIL) named $ASIL_{IPT}$. Interest prohibition has old roots in a variety of ancient cultures. These roots take the form of objections, some of which are outdated and some of which still have some or even significant relevance. I will speak of dialectical roots because these roots take the form of arguments with a dialectical (that is logical) form which may be sufficiently convincing to convey the justification of interest prohibition without reliance on external authorities.

The recent advance of Islamic Finance has brought interest prohibition back to the agenda of financial research. The prominence that interest prohibition has regained, calls for an investigation of its roots, not so much in historic terms but in conceptual terms. That investigation may, at least in principle, lead to the discovery of new dialectical roots, and as I will explain below, in effect it does.

1.1 IP: simultaneously on the way out and on the way in

Writings about interest prohibition from a conventional perspective invariably depict it as a proposition which has become outdated because of improved economic insights and because of strengthened legal thinking, often attributed to Jeremy Bentham, placing the freedom of contract (including financial contracts) in very high regard. The development of a permissive attitude towards interest went hand in hand with overcoming mistaken views on astronomy and biology and with the development of restrictions on various forms of human economic exploitation. In each of these cases Christianity, or in any case powerful parts of Christianity, failed to play a leading role in the modernization. As a consequence of these factors modern writing on interest prohibition from a conventional perspective is not informed by any urge to view interest as a mechanism worth being avoided, prohibited, or prevented to date.

Islamic Finance, however, which shows a positive momentum since around 1970, propagates interest prohibition, and as a consequence IP is on the way up in some Islamic countries at least.

1.2 Objectives and results of this work

In this paper I will survey known objections against the interest mechanism and consider possibly novel objections against interests. I will assume that different objections may be grounded on different perspectives on money, and consequently the issue of their consistency does not necessarily arise.¹ It is not clear in advance that any of the known objections against interest payment are still valid with respect to money in its current form.

Writing this survey of objections against interest has been an independent objective of this paper, but I have no doubt that improvements of this listing, as well as of the descriptions therein can be found. The items in the list will be referred to as dialectical roots, or dialectical root cases with the latter phrase stressing the sometimes anecdotal form of the item descriptions. With the term dialectical, which I am using as an alternative for the adjective “logical” and which I prefer because it carries less formal connotations, I intend to express that these roots exist in a setting where an assessment of their merits is in principle subject to a dialectical discourse (rational reasoning). This stands in opposition to the use of so-called arguments from authority. The demarcation between dialectical reasoning and argumentation from authority is not always clear. I do not intend to suggest that arguments from authority must be weak, as if they are a cover-up for lacking conclusive arguments. There is room for such arguments and there is also room for a distinction between good, mediocre, and bad arguments from authority.

The second purpose of this survey of root cases is technically more involved. I will consider a single financial product: a savings account with interest (SAI). SAI was considered in detail in [7], to which I refer for further information.

¹ Because different objections may pertain to different, and possibly inconsistent, views on money.

Regarding SAI it is possible to draw a number of specific conclusions based on an inspection of the inventory of dialectical root cases. Indeed I propose to believe the validity of the following assertions:

1. Currently SAI is not permitted by mainstream Islamic Finance, this prohibition is absolute in the sense that no positive interest rate returned by the bank to the lender is allowed. (Opinions differ about the question whether or not there are circumstances of extreme urgency in which the prohibition can be ignored.)
2. The prohibition of SAI cannot be convincingly inferred from any of the dialectical roots that have been collected in the survey below.
3. The justification of the prohibition of SAI in any framework of Islamic Finance must be found in arguments from authority put forward by past and current Islamic scholars. These arguments from authority do not depend on any claimed similarity between one of the root cases for IP and SAI.
4. Because of the central importance of SAI in the conventional financial system, it is valid to say that the justification of the methods of Islamic Finance currently depends to a significant extent on arguments from authority.
5. The dependence of Islamic Finance on arguments from authority, rather than it being exclusively based on the contemplation of dialectical roots is a non-trivial conclusion. (It constitutes the central conclusion of the paper.) It may seem obvious at first sight that IP justification in Islamic Finance depends on arguments from authority but that is a matter of appearance rather than a matter of fact in the light of the following observations:
 - The Church opposed to interest, after the middle ages, on the basis of Aquinas' reasoning which is of an intellectual kind rather than of a religious kind. In other words Aquinas' dialectical root(s) for IP has undone IP from its religious character (at least in the context of the Roman Catholic Church), and as a consequence it has taken IP outside the area dominated by arguments from authority.
 - Many texts on Islamic Finance that explain IP as being rooted in arguments from authority do not bother to argue that no alternative (and thus less religious) arguments can be established for IP (compliant with an Islamic context of course).
 - Maximizing rather than minimizing reliance on arguments from authority seems to motivate much writing on Islamic Finance.
 - Only by taking a single financial product (in this case SAI) as an exemplary case, the demonstration of the unavoidable role of arguments from authority can be made to work.

6. Obtaining a convincing application of arguments from authority to the particular case of SAI requires a meta-theory and more specifically a structure theory of arguments from authority in the Islamic tradition. Such a meta-theory seems not to exist at this moment.

1.3 Why does this all matter?

Developing a meta-theory for arguments from authority applicable in the setting of contemporary mainstream Islamic Finance is not an objective of this paper. The rather modest point made here is to demonstrate that such an analysis is indispensable for understanding IP as occurs in Islamic Finance.

The relevance of this particular conclusion transpires when one looks through introductions to Islamic Finance, where quite often some argument against the interest mechanism is suggested (invariably connected with one or more of the dialectical root cases listed below) as being a plausible argument for IP.² Such arguments are all misguided. None of these arguments can explain why SAI must be categorically prohibited, and not merely preferentially avoided or simply have its interest rate minimized. The remarkable reward which authors obtain from the use of arguments based on one or more of the dialectical roots is that they need not be clear about the arguments from authority involved in the matter. If an appeal is made to an argument from authority that appeal is usually phrased in quite simplistic terms. For instance by asserting that “it is well-known that Islam prohibits all forms of interest”. For the reader it is an almost impossible task to find out why that assertion must be confirmed.³

1.4 Preliminary remarks concerning interest

As a preparation for the real work of the paper I provide some comments on (i) the terminology about interest, (ii) the selection of SAI as a special interest bearing financial product which can play a pivotal role in the demonstration that arguments from authority must play a central role in Islamic Finance, at least as long as it rejects SAI, and (iii) the role of IP in the characterization of Islamic Finance.

1.4.1 Usury versus interest

Following [1] I will assume that interest prohibition has throughout history emerged (and re-emerged) after phases in which interests are common practice.

²See for instance [27] for an example of such an analysis.

³Scholarly authors contemplating the assertion that “Islam prohibits all forms of interest”, all seem to dispute a strict interpretation of that somewhat uncompromising claim. For instance see [16, 17] and [24]. These and other scholarly works on the subject assert that Islamic Finance proponents’ claim of interest prohibition factorizes into two independent separate claims: (i) *riba* is forbidden and, (ii) the so-called equivalence view: *riba* equates interest.

For (i) I refer to [20] which unambiguously demonstrates the complexity of understanding that claim. For (ii) one may consult [16] and many other sources, all testimony to the difficulties involved in establishing the equivalence view.

Philosophical and theological considerations, sometimes quite remote from the economic theory and practice of the day, have mostly driven the moves towards interest prohibition. Thus IP is (and always has been) a reactive phenomenon regularly gaining momentum after phases where IP has been nearly forgotten. In [18] it is reported that quite in the Islamic world strict rules for IP were often evaded by high ranking authorities when the economy of the state was at stake.

It seems impossible to contemplate IP in the context of Islam without entering in a complex debate concerning the historical meaning of technical terms as expressed in terms of their somehow well-known contemporary relatives. As an illustration of this situation I consider the well-known contrast between usury and interest about which [12] asserts the following (rendered in my own words), concerning the meaning of these terms in Europe in medieval times:

Usury. Usury derives from the Latin “usura”. It denotes the reward that a borrower of a loan returns to the lender (of that loan) justified by the profit the lender makes on operations enabled by the borrowers control over the means constituting the loan.

Interest. Deriving from the Latin “interesse” denotes the compensation made by the borrower for the the lender’s opportunity costs implied in providing the loan.

Risk. Risk of borrower default was ignored because borrowers were normally assumed to be in possession of significant real estate of a value far in excess of the loan.

This explanation may be contrasted with common assertions that either (i) usury is an old term for interest but with the same meaning in essence, or that (ii) usury refers to interests which are in some sense excessive and are for that reason to be considered especially problematic.

Below I will take interest to be a combination of usury and interest as given above, possibly including a compensation made by the borrower to the lender for borrower default risk.

1.4.2 SAI: the simplest case of a financial product involving interest

In [7] the point of view is taken that interest prohibition implies a reduction of the set of permitted financial products. “Reduced Product Set Finance” was coined as a phrase to indicate a financial system grounded on financial product restrictions.

The clue that a system may potentially be strengthened by removing some of its most useful features has a long history in computer science: RISC (Reduced Instruction Set Computing) gained an advantage by simplifying processor logic in favor of processor speed. Functional programming removes the assignment statement, in spite of its central role in all imperative program notations; scripting languages often ignore typing of data. In these cases a seeming defect is turned into a (claimed) advantage for the resulting programming methodology.

A search was performed in [7] to determine the simplest conceivable financial product which becomes forbidden under a comprehensive exclusion of interest payment. It was concluded that this simplest case is found with an interest bearing savings account hosted by a bank offering maximal protection (in comparison with competing financial institutions) against default risk. Upon further inspection that mechanism turns out to be quite complex and the question what exactly is supposed to be forbidden becomes harder to grasp when the financial product at hand is specified in more detail.⁴

Below I will write as if SAI is self-explanatory; my belief in the pivotal role of SAI in the issues concerning IP stems from the following observations.

- As interest rates decrease the substance of injustice that SAI may create decreases as well. Accordingly no argument based on expected injustice can explain that SAI must be forbidden for all (especially small) interest rates. It is the categorical nature of IP in this particular case that calls for attention.
- One may say: first prove that Islam prohibits all forms of interest, and subsequently apply that result to SAI. Here I propose that the intuition of cut-elimination in proof theory is not omitted too soon. If this kind of proof exists then a shorter proof (that IP applies to SAI) must exist which makes no use of the outermost application of modus ponens.
- It may be assumed that the borrower (the bank, guaranteed by the state) will not default. Thus a complete separation of compensation for the lender's opportunity cost from the compensation from the lender's exposure to borrower's default risk is obtained. This is the significant simplification that SAI provides with respect to financial products for consumer credit.

1.4.3 Islamic Finance without interest prohibition

One may think that Islamic Finance cannot be separated from interest prohibition, so that the problem if and how IP can be justified concerns the rationality of Islamic Finance straightaway. This issue has been raised in [9] from which I take the following analysis.

Questioning the arguments for IP is not equivalent to questioning the rationale of Islamic Finance, because, remarkably, the rationale of today's Islamic finance becomes conceptually simpler if no mention of interest prohibition is made at all. Although speaking of interest prohibition provides a fast track to an explanation of the current structure of Islamic finance, that fast track is found at the cost of leaving the questions mentioned in 1.5.2 below in need of an answer.

⁴Without further elaboration I mention that for an adequate understanding of SAI it is important to imagine that the borrower will be providing that service to several clients in parallel. A formalization of concurrent systems which has sufficient expressive power to model that form of parallel activity is the thread algebra of [5].

A simpler explanation of Islamic Finance, which is not based on an axiomatic assumption of IP for, either in general or for any particular financial product, is that Islamic Finance consists of the theory and practice of using a growing portfolio of financial products which are considered flawless by a large majority of Islamic scholars.⁵ Having this convention in mind Islamic Finance need not disallow any financial products on an indefinite basis. By being strict when admitting a financial product the creep of unwanted practice is stopped, while a more liberal standpoint in philosophical terms (if ever obtained) can be implemented by simply admitting a larger product family.

Now this picture may be too simple as well. Tarek El Diwany, in [13], which I have surveyed and commented upon in [4] remarks that although the modern product line of Islamic Finance has obtained wide-spread scholarly approval, its realization in Islamic countries seems to have had side effects that must raise doubts about the plausibility of today’s mainstream approach to Islamic Finance.

1.5 A wider context

The conclusions of this work should preferably be assessed in a wider context than the limited theme of IP justification. An attempt to grasp a wider perspective leads me to three separate observations: (i) it will be worthwhile to investigate chained arguments from authority because these are likely to have an interesting structure, (ii) worries that have been voiced about the justification of IP in the setting of Islam: three such worries are phrased as questions and as it turns out the final dialectical root case provides a context where these questions have an answer that takes care of the mentioned worries, (iii) the project of developing an ASIL for IP is an ongoing one, and some implications of this work for the design of an ASIL in this context are collected.

1.5.1 Remarks on arguments from authority

I hold that general assertions like “Islam prohibits all forms of interest”, presented without any further justification, have the opposite effect of what may be intended by an author who makes that assertion: to diminish the strength of the argument from authority at stake rather than to enforce it. It makes one’s belief in the justification of IP decrease rather than increase. By being sloppy about arguments from authority an author contributes to their erosion, rather than to their enforcement.

Being precise about lengthy arguments from authority is a complex matter which seems to have been entirely neglected by professional logicians as if there were no conceivable need for it. Without going into details I propose that at

⁵ Under this interpretation the significance of interest is merely that upon its detection (in a financial product specification, however marginal the occurrence may be at first sight) the opposition of a significant number of Islamic scholars can be predicted. The essential step thus proposed is to move interest prohibition from a principled status to the status of a heuristic instrument usable for Islamic financial engineering. The precise form of this heuristics may, however, fluctuate in time, unlike the status of generally approved and centuries old principles.

least seven levels of authority are involved in the reasoning chain that constructs a justification for the prohibition of SAI:

1. The authority of God’s judgements pertaining to matters of finance.
2. The authority of the prophet’s phrasing of God’s views pertaining to matters of finance. (I refer to [11] for a description of the context of the origination of these phrasings.)
3. The authority of the wording chosen by those who have put the prophet’s words on paper.
4. The authority of the Islamic scholars (second and third century) who generalized the prescriptions found in the Qur’an pertaining to IP, to a more universal claim of IP, then put forward as a authorized reconstruction of God’s will in the matter from the revealed sources at hand.⁶
5. The authority of subsequent Islamic scholars who indicated by what priority mechanism the variety of primary and secondary sources of Islam, with relevance to IP, is best understood.
6. The authority of current Islamic scholars who state that IP holds for all (or at least some, including SAI) interest bearing financial products which have been developed for today’s money.
7. The authority of financial experts who claim that IP is not only wanted but that it is also practical to such an extent that maintaining its prohibition (including the prohibition of SAI) is an economically coherent position.

This listing only serves to indicate the unavoidable complexity of arguments from authority that on encounters if IP in the special case of SAI must be motivated.⁷ An appreciation of the complexity is required for understanding

⁶In [8] it is outlined, following [26, 17] that the Qur’anic prohibition of interest made explicit mention of the so-called doubling debt scenario and that subsequent authors (for instance El Jassar, see [17]) have successfully and authoritatively argued for an extension of the principle of interest prohibition to many more scenarios of coupled lending and borrowing. Their arguments derive from the general methodology of Islamic legal and ethical theory construction, in particular (i) that original sources may be understood as having been stated in an exemplary form, so that more general truths lying behind these particular cases can and must be uncovered by subsequent intellectual work, and (ii) that older subsequent work is considered to be more authoritative than later work.

⁷Assuming the analysis is made in English an additional problem requires careful attention. For any analysis of arguments from authority concerning IP the role of the Arabic language presents a very serious problem. Questions about the scope of interest prohibition, the rationale of it, its history and its ethical basis are often confused with issues about the meaning of Arabic terms, the history of that meaning and the particular use made by authors of these terms. In [3] it is suggested that the entire discussion can be performed in English, (or whatever non-Arabic language indeed), assuming that translations of a number of Arabic terms are available.

Satisfactory translations of important terms seem not to exist and it may take years before workable translations stabilize. Perhaps there will be a need for different translation strategies that incorporate specific but mutually incompatible viewpoints throughout the translation of a range of terms.

the relevance of the conclusion, to which most of this paper is devoted, that arguments from authority are essential for the justification of IP in an Islamic context.

1.5.2 Major conceptual questions, accessible to non-Muslims

To see the depth of the problem that an Islamic directive of interest prohibition presents, in particular when based on arguments from authority, I make use of A. Subhani's discussion in [26] of that issue: Given a chain of arguments from authority against SAI, still these problems remain:

1. Why is punishment for offenses against interest prohibition limited to so-called ecclesiastical⁸ punishments.
2. Why are the penalties promised to those who fail to comply with interest prohibition so excessively severe, which is made more puzzling because intuitively the failure becomes less when the amounts of values involved decrease.⁹
3. Why are interest bearing financial transactions in which lender and borrower operate freely to a well-understood, stable, and mutual advantage, while not doing any conceivable harm to any third party, forbidden at all?

As conceptual problems these questions are perfectly accessible to a non-Islamic person. The matter is intriguing by all means, irrespective of one's religious position. The fact that the imperative against interest payments predates the origins of Islam more than 1000 years only adds to the weight of the issue: what was the problem that so many people claim to have seen?

1.5.3 Consequences for an ASIL for IP

The development of an ASIL (Application Specific Informal Logic) for (Islamic style) IP, which has been proposed in [8] is an ongoing process. From the work in this paper some notions can be extracted which are of the generality that these merit a place in the ASIL. This includes the following matters:

1. An ASIL for IP must contain a structure theory for arguments from authority, which is sufficiently flexible to allow a uniform presentations of different chains of arguments and to allow the comparison of such arguments in terms of their force.

⁸Ecclesiastial punishments is the term used by Subhani in [26]. The explanation indicates that these are punishments to be issued by God after one's death, instead of being administered by human courts and authorities, during the trespasser's life.

⁹In particular if so-called concealed interest (as a phenomenon implicit in the use of some particular product) is uncovered after the product has been designed and after a phase of initial usage, it is incomprehensible that someone be severely punished for not having seen that fact before making use of the product. Detecting the occurrence of concealed interest has become an area of specialization inaccessible to average citizens.

2. It seems reasonable to assume that a logic for inference by means of authority can do without general universal assertions which are first derived and subsequently instantiated. Proving that fact about arguments from authority requires what is called cut-elimination in logic and it may be formulated as a requirement on the ASIL for IP that it will allow an analysis of the power of cut-free proofs.¹⁰
3. The contrast between arguing from dialectical roots and arguing from authority requires a firm footing: different inference rules seem to be at work.
4. Dialectical roots can be used in an argument against a financial product if some similarity between the root case and a product instance can be established. ASIL for IP should provide guidelines for proving and disproving these similarities. Below I will argue that none of the dialectical root cases offers a similarity to SAI which by itself induces a prohibition of SAI assuming that one shares the injunction embodied in that particular root case. The weaknesses of this line of thought must be admitted: (a) there is no analysis of the combined implications of two or more root cases, and (b) there is no analysis of the degree of dissimilarity that must be established before a root case can be correctly claimed to be irrelevant for the product at hand (SAI in this particular case).
5. Adoption of the following continuity rule:
 if an argument against a financial product involving a positive (that is non-negative and nonzero) rate of interest depends on expected negative or unjust consequences of its adoption or use, then for some positive interest rate these negative consequences must be negligible (continuity of cause effect relation). Thus, such arguments cannot prove that all positive interest rates (for that specific product) are to be rejected.

2 Generalized phrasing of the interest mechanism

Although interest is always connected with money, the mechanism which has become criticized throughout history is does not require money and not even the existence of money. Below the intuition at stake will be captured in terms of critically productive transactions.

¹⁰The argument that cut-free proofs may be expected for ethical issues is not self-evident. For instance the assertion that person P is entitled to protection from body B may be obtained by first deriving that all human beings are entitled to a certain degree of protection by B. In this example deciding that A is a human being is assumed to be unproblematic. In the case of interest generating financial products, however, it may be quite difficult to decide about the presence of interest. Thus a universal quantification over all forms of interest is semantically more problematic than a quantification over all human beings, assuming that physically problematic cases are ignored.

2.1 Critically productive transactions

From [8] I include the notion and specification of critically productive specifications, further distinguished in lender side and borrower side critically productive transactions.

We say that a transaction between parties A and B is Lender-side Critically Productive (LCP) if A acquires goods, services or valuables G in compensation of lending valuables V to B for some limited duration. It is assumed that these valuables serve no instrumental purpose for B or any other agent other than serving as a means of exchange or as a store of value. We note that:

1. the generation of G is the productive aspect, more specifically B is productive;
2. V may be understood as an asset which represents wealth;
3. B or B's sources will not use V as a tool of some kind during the period of the loan;
4. the apparent circumstance that A is not involved in any substantial fashion in the generation of G constitutes the critical aspect of the transaction.

In a borrower side Critically Productive transaction (BCP transaction), the borrower of valuables produces assets V without sharing these with the owner of the valuables in any pre-agreed fashion.

Any financial product that features interest or concealed interest has a part of its behavior that matches with an instance of BCP or LCP. Instances of BCP and of LCP are found by first instantiating the asset class parameter for valuables, the asset class parameter for goods and the process parameter for the protocol (transfer scenario). The result of such an instantiation is still generic and it must be instantiated further to match with (a component of) a specific financial product.

2.2 Parameters for Critically Productive Transactions.

The mechanisms of LCP and BCP transactions depend on several underlying assumptions of which the most important ones are listed here.

Asset class specification for valuables. Conventional interest prohibition is obtained when LCP is instantiated with money as the asset class for valuables. I will distinguish the following asset classes:

Exclusive valuables: hard to get, stable in value, storable, durable, protectable, appealing, symbolic, non-personal, objective, carrier of wealth (for instance: gold, silver, very fine works of art), usable as a means of exchange and as a store of value.

Non deprecating commodity money: ideal money: a hypothetical category? Just like the exclusive valuables but not exclusive and not primarily a sign of wealth, but merely a proof of purchasing power.

Investment certificates: including shares, bonds, participations to equity funds; assuming that revenues are re-invested in the same vehicle.

Fiat money: including bank money.

Intellectual property rights: including patents, copy-rights, design rights, licenses,

Political power: correctly obtained power in a reasonable political system.

Asset class specification for produced goods. Nowadays everything is expressed in money, but that is not to be taken for granted in a root case for a proposed conjectural history.

Each of the mentioned asset classes may be prescribed for a particular case of a loan. Moreover the following asset classes may be appear for containing goods returned for obtaining a loan (or earned by making use of a loan):

Non-consumable goods: real estate, furniture, tools, weapons, clothes,

Consumables: including: food and drinks, cattle, oil, wood.

Transfer scenario. The protocol of exchanges of promises, agreements, payments and claims. Different scenarios lead to different prohibitions. Different phases of a scenario may prescribe transfers in terms of different asset classes.

I will make use of the straightforward transaction patters only where all steps are specified in advance and no decisions on how to proceed are taken in between except for the possibility that the borrower must tell the lender at maturity dat that he will not be able to return the principal amount.

CPT's (critically productive transactions) as specified above has two parameters V for an asset class for valuables and G for a more extensive asset class of goods, including valuables. $CPT(V,G)$, (that is CPT's with valuables V and goods G) is still very general and it can be instantiated in many ways, for instance: (i) $CPT(EV,G)$ denotes critically productive transactions with exclusive valuables (EV) as valuables and any goods as goods. (ii) $CPT(NDCM,NDCM)$ has valuables and goods both in the form of non-deprecating commodity money (NDCM). (iii) $CPT(FM,FM)$ is the current situation where both valuables and returned goods are given in terms of fiat money (FM).

Nowadays the most frequently occurring type of CPT is $CPT(FM,FM)$, which has many further realizations such as for instance a savings account and a consumer credit.

3 Dialectical roots for IP I: a survey of old roots

Below I will outline the known dialectical roots of interest prohibition. The listing is exhaustive to the best of my knowledge. Cases that are primarily in favor of interest moderation are omitted, because such cases don't touch the fundamental questions concerning strict interest prohibition and also because non-Islamic finance acknowledges the importance of moderation so that views from different sides practically coincide on that matter. Laws against excessive interests rates, but permissive of acceptable rates, and usually issuing upper bounds only, have emerged in many phases of economic history. Each individual case is best understood together with a specific perspective on money, which supports its plausibility.¹¹ These cases may serve as roots for a focus on interest prohibition, while not committing to consequences which may have obtained a wide audience but which may not have been established beyond all reasonable doubt.

3.1 Judaic tradition: don't charge interest from your own people

Perhaps the oldest objection against interest payment suggests that one should not ask it from one's own people (or may I say tribe). In the same tradition debts should be outstanding for a limited period only.

This restriction makes most sense if there is no inflation. Inflation has the effect of resolving debts on the long run, thus mitigating the problems caused by debts.

It seems to be the case that in the Judaic tradition the borrower was considered to be the weaker party by definition. In addition interest free loans were preferred over gifts because a gift may induce a status problem for the receiver.

3.2 Aristotle: accumulation of money for its own sake is wrong

Aristotle argues that money is an instrument that helps trade. Using trade as a method to increase one's stock of money is an inadequate use of the tool and so is lending money in order to receive an interest. Both scenarios represent an unnatural usage of money and are wrong for that reason, the interest harvesting scenario being the worst of the two as it is not even based on proper transactions.

This restriction makes most sense if the money and its circulation has been designed in such a way that each agent has an empty stock of money on regular moments, just like the fuel tank of a car. The restriction seems not to pertain to the prohibition of interest rates that are fixed in advance. Rather it outlaws any transaction exclusively intended for monetary advance.

¹¹In [2] I have made an attempt to provide a survey of different perspectives on money.

3.3 Qur'an: doubling debt scenario (DDS) not permitted

The doubling debt scenario involves a debt which is doubled if the borrower must admit that he will not repay the principal sum at the agreed time of maturity. There are variations on this theme with and without the agreement to pay an interest to the lender with regard to the first period, and in the most liberal interpretation of interest prohibition only an exponential growth by way of repeated redoubling of that interest sum proper is prohibited.

DDS suggests an extreme case of excessive interests but it all depends on the length of the period, with nowadays common interest rates below 10% it may take no some 10 years to reach duplication. So if the period in DDS is 15 years that corresponds to an interest rate which would not be considered excessive today.

The DDS prohibition involves an interest rate (100% per period), and it also involves making a plan or protocol about transfers between lender and borrower in advance. These elements have been taken on board by all subsequent authors opposing the interest mechanism.¹²

3.4 Medieval Roman Catholic Church: savings monopoly

By prohibiting interest paid for consumer credit the state can make it more attractive for citizens and organizations to place deposits originating from savings under state controlled institutions, thus helping to finance the state.

In [12] the hypothesis is formulated that this mechanism has motivated the Church's ongoing endorsement of interest prohibition, although it is not considered explanatory for the origination of that endorsement.

3.5 Aquinas: double compensation objection

An important explanation of the rationale of interest prohibition is found in Aquinas' treatise "De Malo", which has probably been written in Paris between 1270 and 1272, on the basis of preliminary work done between 1265 and 1268 in Rome. A recent and very readable translation to German is given by C. Schäfer in [25] (Questio 13, *Artikel* 4, pp. 152-165). Many arguments in favor of the payment of interests are known to Aquinas, including the concept of opportunity costs, but nevertheless he decides that it is strictly forbidden (*Todsünde* in Schäfer's translation). The key argument is two-fold: (i) All items when used are either left as they were, perhaps with minor damage or wear (for instance a

¹² The doubling debt scenario (DDS) may be considered only an example from a wider range of illegal practices, which was explicitly mentioned explicitly in the Qur'an perhaps because it was applied frequently in those days. (But a proof of that historic basis for rejecting DDS seems not to exist.)

Around 1000 AD, using abduction, a more general imperative has been developed, which is nowadays understood as a universal objection against the use of interests in any conceivable case. This generalization impacts on today's design of the imperatives of Islamic finance. It fails to constitute a dialectical root case, however, as it primarily applies an argument of authority to the methodology of reading a specific collection of revealed sources.

house that is rented) or are actually consumed (such as water or food). Money is of the second category, as its use is destructive at least from its user's perspective. Thus its use cannot be sold, only the good (that is money) itself can be transferred. Asking for an interest is asking for double compensation: for the principal sum proper and for the usage thereof but these two forms of usage are exclusive. (ii) The claim of interest in connection with lending is unnatural, and for that reason it is forbidden.

The biblical texts mentioned by Aquinas are all inconclusive and for that reason he uses a style of reasoning dating in part back to works of Aristotle. Aquinas finds it permissible to lend money against a zero interest rate, under certain circumstances that is even considered a virtue. Remarkably interest may be charged according to Aquinas if a promise is made by the borrower that the money will not be used, at least not in its monetary capacity. Here is an example that I designed using some ingredients from the text of Aquinas: a lender A may lend golden coins to B, which the borrower melts and then turns into a golden bowl, for the use of which he will pay A some amount (to be understood as a rent rather than an interest). At maturity of the loan B will transform the bowl back into the original volume of coins and redeem the amount due to A.

Aquinas failed to appreciate the circulating nature of money, at least in the mentioned text; its use may seem consumptive or destructive, one time only, like that of food, at first sight, but on the long run the money returns. It is not easy to see why Aquinas considered his arguments to have been conclusive himself, except for the fact that he may have felt somehow obliged to steer towards the conclusion he gave in his answer.

Schäfer states that Aquinas' intention with the entire book was not to primarily to promote his own points of view, but rather to collect a range of existing sources in a unified manner.

In *Summa Theologica*, Question 78, "the sin of usury" (see [19]) Aquinas presents less comprehensive but similar arguments, though now concluding that borrowing with usury from a professional lender used to accept usury, may be permissible if it is done with good purpose. In the *Summa* Biblical references against usury are not deemed conclusive and like in "De Male" technical arguments against usury are put forward as being decisive.

3.6 Subhani: ex-sui creation trespasses on God's territory

From A. Subhani's contribution "Whither Islamic Finance...", as posted on New Horizon (January 2011) I take this quote which pinpoints ex-sui creation as a right of God which man should not reserve for himself. Avoiding ex-sui creation is a motive for opposing to interest bearing loans.

To sum up, the operative principles of Islamic finance require that the internal process of the transaction, which is the focus of Islamic law and not the effect of the transaction, must incorporate cogeneration and eliminate self generation, delay (except under dire necessity) and risk-taking. These operative principles of Islamic finance

are consistent with the theoretical model of creation, which conceptually consists of (i) creation from nothing (ex-nihilo creation); (ii) creation from the object itself (ex-sui creation, to coin a new term) and (iii) creation from other object (ex-alio creation, to coin yet another new term). Ex-nihilo creation is expressly and exclusively a divine capability and hence any human action even resembling ex-nihilo creation (e.g. delay in transaction settlement, as explained above) stands prohibited. Similarly, ex-sui creation is expressly and exclusively a divine capability and hence any human action even resembling ex-sui creation (e.g. interest on money) stands prohibited. These two prohibitions constitute the essence of the prohibition of riba. Ex-alio creation alone is a human capability and hence any human action that incorporates ex-alio creation (e.g. murabaha in the commercial domain) stands permitted. This permission is the essence of the permission of bay. Finally, with the Islamic legal focus on generation (the prohibited self generation and ex-nihilo generation and the permitted co-generation), speculation (risk-taking) automatically stands prohibited, yielding a cohesive theory of Islamic financial law, at once monotheist, moral and ethical.

The argument against ex-sui creation is a defeasible argument. It can best be imagined if money is gold or silver. But if, for instance, the money is gold then it assumes in addition the silent assumption that the prospective borrower is not in the possession of a gold mine which he can exploit after receiving an initial loan from a lender, but which he cannot exploit without a loan or a third party investment.

4 Dialectical roots for IP II: new roots

Besides the old root cases other principled arguments against interest can be imagined. Below some listing of those is given. Completeness cannot of be guaranteed of course (defining its completeness is problematic too).

4.1 Strictly bifunctional money

Money is often characterized as a being a means of exchange (MOE) and constituting a store of value (SOV). If one designs a financial system in which money serves these two roles only (strictly bifunctional money), then that system will not generate interest payments, because it serves neither of these functions.

In abstract data type theory an initial algebra exclusively satisfies the equations constituting its specification. $I(\text{MOE}+\text{SOV})$ may represent an “initial” design of money specified by MOE plus SOV. The virtual omnipresence of the interest mechanism suggests that either a financial system compliant with the specification the name $I(\text{MOE}+\text{SOV})$ does not exist, or it exists and in addition it provides for interest payments.

4.2 Circuit theory

Circuit theory proposes to prove that widespread lending against interest can only be done if either the amount of money increases with inflation as a result of if the economic activity grows so that the amount of money can grow without causing inflation. Assuming a stable economy as the intended equilibrium state rather than a growing economy, the observations made by circulation theorists indicate interests as a cause of inflation, and for that reason as a mechanism that must be avoided.

Indeed by lending money to a collective of borrowers these are placed in an impossible position because the interest that they have to pay are physically nonexistent, at the time the loans are initiated.

If one assumes that a fraction of the loans will not be repaid due to borrower default this inconsistency disappears, however.

4.3 Interest prohibition for ideal and fair money.

Ideal money is fairly accessible to anyone, it is insensitive to inflation or other forms of depreciation. A plausible way for it to have been distributed is by a state agency making sure that everyone gets sufficient means of existence. Now the simple principle is that ideal money should only be used by its owner, although technically it can be as well used by anyone else. Lending it does not change ownership. It follows that offering a compensation for lending or obtaining an advantage out of borrowing is simply not plausible, as long as the tight coupling between owner and user is maintained.

4.4 Personalized electronic money: access to one's own money only

If, in a near future all money has become electronic, each occurrence of it may be tagged with its owner's identity. During a transaction the owner is modified. Each transaction must be "real". A credit sale of money can be forbidden. Now lending becomes impossible (or at least useless), if it is additionally required that spending money can only be done by its owner.

Strictly speaking this is a technical argument against debt. In these circumstances borrowed money cannot serve as a manifestation of purchasing power (MOPP) because it cannot be used by the borrower as a means of exchange (MOE). As a consequence there is no basis for either asking or paying interests. In fact it becomes plausible in these circumstances that interests are negative and compensate the borrower for the cost of holding the loan until the lender is able to take responsibility for the principal amount again.

4.5 Limited double compensation objection

If the double compensation objection is taken more strictly, interest can be paid by the borrower for that fraction of a loan which is not used for expenditures.

More precisely if a loan has the effect that on a number of days the borrower has an additional positive amount of money available, he may pay a rent for that money (renting it only when and to the extent that it constitutes a part of the borrowers positive balance) because he is using it not “as money for purchasing objectives” but only to feel secure about his purchasing capability. (This seems to be consistent with Aquinas’ views.)

Assuming that the borrower’s spending is not known beforehand, the precise amount due as rent for the principal sum (computed along the lines just mentioned), is only known at the date of maturity of the loan.

I will assume that spending is done on a FIFO (first in first out) basis, if more loans are obtained. Indeed the situation gets more complex if a borrower obtains different loans at different moments. Interestingly later loans will probably produce higher returns to the lender because they add more to the integral of purchasing capability.

In this view the money cannot be abstracted from its physical presence: FIFO requires a time stamping of monetary tokens.

Taking Aquinas’ analysis for true, there must be a permissible rate for borrowing money money that is not used for expenditures during the period that it is lend. Let this rate be p , then one might say that a double amount can be borrowed at that rate under the condition that half of it will be kept in store by the borrower. This proves that what Aquinas writes is permissive of interest in the case of SAI rather than dismissive, assuming that some constraints on usage may be imposed.

In terms of a perspective on money one may think of $I(MOE+SOV+MOPP)$, money that exclusively serves as a means of exchange (MOE), a store of value (SOV), and a manifestation of purchasing power (MOPP). It is the only latter role that qualifies for an admissible compensation by the borrower.

4.6 Credit money only: service replaces interest

Once cash has disappeared and all money has become electronic it is conceivable that all money used by consumers is debt to a bank. Consumers may choose a bank where they intend their incomes to be accumulated through transfers from other banks. In this situation the non-institutional agent cannot have free floating money that he does not lend to anyone. The only choice available to the client is the selection of an institutional borrower. Now clients may not wish to perform that selection on the basis of interest rates.

It is unsatisfactory that banks compete for clients by offering high interest rates which at the same time undermine a bank’s financial stability.¹³ Instead of

¹³The experiences made with the so-called Icesave problem that hit savings account holders from the UK and the Netherlands as a consequence of the 2008/9 financial crisis, confirms that this issue is real. The protection of consumer property against a malfunctioning interest driven competition for consumer savings has proven defective and the legal resolution of the matter has proven to be difficult.

Focusing on the Dutch situation the following can be added: astonishingly savers who opted for putting their savings on an Icesave account on the basis of promised high interest rates were afterwards portrayed as having been greedy and having been irresponsibly unaware of the

attracting customers by promising a relatively high interest rate on their credit accounts a financial institution may offer other services and advantages, possibly including interest free credits for particular purposes, or free medical service under certain conditions, in order to satisfy a broad spectrum of (prospective) client needs.

4.7 Prohibition of CPT(EV,G)

I will now use the formal notation for transactions (that is financial products) of critical productivity type. This allows to formulate a reasonable “new root” for interest prohibition.

CPT(EV,G) prohibition expresses the prohibition of both LCP(EV,G) transactions and BCP(EV,G) transactions.¹⁴

I will assume that A intends to lend exclusive valuables V_e (that is V_e is of type EV) to borrower B. Now it is reasonable that a transaction α of which this lending is a constituent has no part that matches either with BCT(EV,G) or with LCP(EV,G). To see that this prohibition is rational notice:

1. The fact that A is in the possession of V signifies that A has acquired an important and exclusive position. Ownership of V_e , which is assumed to have been acquired in a legitimate fashion, brings with it a responsibility for A to make use of that ownership himself.¹⁵
2. That temporal transferal of control over valuables V_e by A to another agent B is therefore unethical, irrespective of interest being paid, claimed, or promised, in any direction.

fact that they had to take many more factors into account when making decisions concerning savings account selection and management. At the same time Dutch authorities (DNB, De Nederlandse Bank) felt unauthorized to inform the public of the particular risks that were known to them already. Indeed these risks may get out of control once their existence is made public by DNB, to the extent that, paradoxically, communicating about the risk becomes by itself a very problematic risk factor.

One may compare this to a fire-alarm which is left unused because of the risk that it induces a panic. Or with a vital error signal that is not flagged with in an airplane in order not to deflect the pilot’s attention. For some reason financial risks can hardly be decoupled from the euphoria or panic that surrounds them.

Local municipalities were supposed to maximize expected income from interest rates when placing their savings (while risky investments had already been labeled as being inappropriate for tax generated money) and municipalities were not even permitted to investigate the stability of the different banks, that investigation being the sole task of financial authorities, who, however, kept silent instead of informing the public (including said municipalities).

¹⁴ To illustrate the problem caused by violation of CPT(EV,G) I will consider an analogical situation, which is suggestive of how exclusive the possession of assets of the asset class EV is supposed to be.

Assume that A avails of political power that has been rightly obtained on the basis of A’s personal authority. Now it is clear that if A temporarily hands over power to B with an expectation of compensating returns, that constitutes a problem, equally much as it is considered when A hands over power to B in order to allow B to profit from this. Only if neither A nor B will profit from the transfer and it serves a good purpose in general it will be allowed.

¹⁵For instance A may buy real estate in exchange for (a part of) V_e and subsequently rent that to others, thus making sure that others profit from A’s actions.

3. It is allowed, however, that A asks B to keep V_e in store ready for A's later use of it.

I notice that, in the context of a theologically based endorsement of this prohibition, this particular rule of prohibition has a number of intriguing properties:¹⁶

- This prohibition might be endorsed by some god (hereafter called God). That endorsement can be promised by Gods authoritative priests or scholars. Assuming that endorsement:
- Violations of this prohibition are punished by God only because those who own exclusive valuables are in power by definition and earthly punishment cannot be adequately administered to them.
- The punishment promised on violation is very severe because it is essential that the wealthy go at lengths to realize a just society by their own action. Only by giving away their wealth they can escape from the significant obligations that go with wealth.
- An offense against this prohibition need not damage any one else except for the fact that the owner of V_e by failing to live up to his duties fails to contribute to the best operation of society, a course of action that A owes to God. As a consequence promised punishment need not be based on third party damage.
- Because it is a matter of principle the degree to which control is transferred, concerning the use of V_e as measured by the productive capacity which goes along with its transferal does not influence the promised penalties. In other words any non-zero production of G results in an offense.
- If money (say fiat money FM) is not classified as exclusive (EV) it is conceivable that prohibition of CPT(EV,G) coexists with permission of CPT(FM,FM).

5 Dialectical roots do not imply the prohibition of SAI

I will now consider each of the dialectical roots for IP and one by one it will be argued that the root cannot be used to infer that SAI must be prohibited. Because these dialectical roots cover all rational arguments for IP, it follows that no such rational argument exists in the specific case of SAI. This reasoning may be criticized for ignoring the possibility that a combined use of different dialectical roots might lead to a convincing rejection of SAI. Combined use of two or more roots is only possible if these assume compatible perspectives on money. Lacking the ability to analyze this matter conclusively I must admit that the

¹⁶In fact one finds the key properties that Subhani in [26] claims to be in need of an explanation (which have been summarized as three questions in section 1.5.2 above).

main conclusion of this paper, that the justification of SAI prohibition necessarily involves a chain of arguments from authority has been made plausible but has not been secured with complete certainty.

The absence of an argument from a root case to SAI is understood as the implausibility of the presence of an analogy (see [22]) between the root case and the description of SAI.

5.1 Judaic tradition

In the Judaic tradition the lender is supposed to have a stronger position than the borrower. This is entirely different from what SAI offers where the borrower has the stronger position by far. I refer for this matter to [15], who suggests that loans from Jews to other Jews were considered consumptive credits.

5.2 Aristotle

A savings account can very well be used to store a reservation. The obtained interest may be an unintended and even marginal side-effect. Prohibition of receiving interest for an SAI cannot be based on the hypothesis of accumulation for its own sake, conversely, the lender may accept a low interest rate because he sympathizes with how the borrower (the bank in the case of SAI) runs its business.

5.3 Doubling debt scenario.

The doubling debt scenario can be understood as being excessively harsh towards a borrower incapable of returning the principal sum at the date of maturity. It represents usury in a morally objectionable form (taking as a part of its meaning the excessive imposition of a burden on the borrower's side). There is no impact on the status of SAI, however, because in SAI the risk of default for the borrower is close to zero because the borrower is supposed to possess ample holdings available for liquidation when needed.

5.4 Savings monopoly

This root is tricky because although it may be thought of as a reason for the Church to oppose positive interest rates it hardly qualifies as a justified argument. From an Islamic point of view the monopoly that the Church may have intended to preserve for itself lacks justification, and so do all other monopolies.

I conclude that it is a virtue rather than a flaw of SAI that it counteracts a savings monopoly, whoever may be profiting from it.

5.5 Aquinas

Aquinas' objections come quite close to making sense for SAI. It is no wonder that exactly his arguments have dominated the views of the Church concerning interest for centuries.

But if the bank offers an interest rate lower than what it usually earns when putting lenders' money into operation it is clear that no duplication needs to take place.

The double compensation objection is connected with several other and more recent objections: it might be considered a precursor of the circulation theory argument (5.8 below), it might also be considered a rendering of the argument of strictly bifunctional money (5.7 below).

Two aspects are underrepresented in the DC objection: the circulating nature of money and the presence of borrower default risk. But there is something to it as well: if it is claimed that the borrowing bank in the case of SAI will not default because it can sell (liquidate) its holdings when needed there is no guarantee that the money needed to buy those assets exists in the system.

The DCO objection is somehow connected with the necessity of either economic growth or inflation in an economic system that makes use of interest based loans on a significant scale. But it fails to explain why a categorical rejection of SAI is in place.

5.6 Ex-sui creation

Subhani's argument about ex-sui creation is ineffective to explain what might be wrong with SAI provided the borrowing bank can produce the required interests by normal trade and investment operations. The creation is not simply ex-sui, because the bank adds its own unique expertise and its superior management competence.

The very reason that the bank offers an interest rate is based on its self-confidence that it knows best how to turn the money into a profitable and useful investment.

5.7 Strictly bifunctional money

This way of arguing against SAI fails on the observation that no proof of concept for I(MOE+SOV) has been provided.

In different words: only after it has been established that I(MOE+SOV) provides an adequate basis for a financial system, one may claim that its simplicity and its logical coherence per se constitute morally dependable grounds for IP.

5.8 Circulation theory

If the amounts saved are low the circulation theory argument does not invalidate SAI as a reasonable mechanism. The objection of circulation theory seems to depend on the assumption that a principal amount will always be returned. But that assumption is unrealistic. Having that assumption out of the way interests can be explained as an insurance against borrower default.

5.9 Interest prohibition for ideal and fair money.

If money is designed so that usage of borrowed money is rejected on moral grounds interest is rejected as a consequence and it need not be independently forbidden.

5.10 Personalized electronic money

Equally, if debt cannot occur interest does not exist and for that reason it cannot be forbidden.

This kind of argument has been used for the case of division by zero: who claims that this is forbidden (not allowed), implicitly admits that it is possible. See [6]

5.11 Limited double compensation objection

This mechanism seems to be more permissive than Islamic Finance is. It cannot be used to argue for a strict prohibition of interest in the case of SAI. On the contrary, this mechanism can explain a legal amount due for borrowing money under the assumption that some fixed fraction of the money will be kept available by the borrower, who promises not to make use of it for any form of expenditure. In this case the money serves as a MOE (means of exchange), a SOV (store of value), and a MOPP (manifestation of purchasing power).

5.12 Credit money only

This is close to the current situation. Even if many prefer other virtues from a borrower than promised interest the fact that other criteria come into play does not invalidate interests as a means for a bank to attract SAI's from potential customers. A categorical rejection of SAI cannot be inferred from this root.

5.13 Prohibition of CP(EV,G)

This root case is inapplicable for arguing against SAI, as it assumes that the lending party is the stronger one, which is not the case in SAI.

6 Concluding remarks

In [3] an attempt is made to formulate how logic can be helpful for decision making in an Islamic context. In principle it is conceivable that, after an extensive period of development of so-called Real Islamic Logic (RIL) that apparatus can become helpful to re-analyze the complete corpus of writings on interest prohibition and to come up with a rationale for IP that has yet been missed so to speak. Analyzing this large and heterogenous body of texts is a daunting task, and it may be doable only with the help of recent information technology (such

as: ontologies, data mining, search engines for large volumes of text, automatic translation).

There is no need to summarize the conclusions of the paper. More importantly its potential weaknesses can be stressed as a form of risk assessment, as none of it has the rigor of mathematical proof. The following considerations might lead to dismissing the work done in part or in total:

- The possibility (and relevance) of making a sharp distinction between dialectical arguments and arguments from authority may be disputed.

For instance in [23] a thorough analysis of IP is given which makes no such distinction.

- Dialectical root cases provide a way to obtain categorical injunctions against interest for specific (proposed) financial products which cannot be found from any considerations regarding negative effects of their use. This argument has been highlighted as the continuity rule above in section 1.5.3. If the continuity rule is rejected, the isolation and survey of dialectical root cases cannot play the role in analyzing IP that I have claimed it to play.

- The suggestion that cut-elimination is possible for arguments from authority may be naive.

- There may be an implicit bias in this account against the formation of new authorities and for that reason against the inclusion of their views into an ASIL for IP. In particular the trajectory an individual scholar moves along towards acquiring new authoritative status may involve both a confrontation with the usage of arguments against specific financial products based on root case similarity, as well as an extensive confrontation with negative practical consequences of ignoring IP in specific cases.

Thus, although the continuity rule implies that expected disutility of positive interests cannot justify their categorical prohibition, it is very well possible that observed disutility constitutes a part of the background acquired by a new authority who bases his own judgement that IP is mandatory in part on his personal observations of negative consequences of a system with interests. (This is similar to the arguments that may be used when imposing a strict ban on alcohol consumption.)

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